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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,427	07/27/2001	Patrice P. Parent	104017.160	8846
7590	01/13/2005		EXAMINER	
Wayne M. Kennard Hale and Dorr LLP 60 State Street Boston, MA 02109			KHAN, ASHFAQ M	
			ART UNIT	PAPER NUMBER
			2137	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/916,427	<b>Applicant(s)</b> PARENT, PATRICE P.	
	<b>Examiner</b> Ashfaq Khan	<b>Art Unit</b> 2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>02/06/2003</u> . | 6) <input type="checkbox"/> Other: ____  |

*Remarks*

Claims 1-28 are pending.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1- 3 are rejected under 35 U.S.C. 102(e) as being anticipated by O'Flaherty et al (U.S. patent # 6,275,824).

Regarding claim 1 O'Flaherty discloses, a internal security method for a relational database system (Fig 1 Item 152), comprising the steps of:

(a) determining which data information from the total amount of data information stored in system databases is restricted data information that shall not be accessible by each and every 1 to N system users, where N is an integer greater than 1; (Col 5 line 32-40, Col 4 line 8-18, Col 4 line 27-29).

(b) determining for each system user the restricted data information that such a system user shall have access; (Col 4 line 49-60).

(c) creating at least one relational access table with each system user having at least one record in the relational access table that is keyed to that system user's access to the restricted data information that was determined at step (b); (Col 4 line 7-18).

(d) each system user accessing restricted data information stored in the system databases according to the relational access table created at step (c). (Col 4 line 32-34)

Regarding claim 2 O'Flaherty teaches about TERADATA, capable to generate SQL queries (Col 7 line 55-63). TERADATA is a Relational database / structured query language database.

Regarding claim 3, it is known that in a relational database information are stored in the table. Primary key and foreign key are used to establish the relationship between tables. Even though in the references there are no direct mention about any primary key or foreign key relationship, but it is an inherent criteria of any relational database (Col 3 line 1-3). Therefore, claim 3 has been rejected under 35 U.S.C. 102(e).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1 Claim 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Flaherty in  
2 view of the book – Date, C.J., An Introduction to Database Systems, 7<sup>th</sup> edition, Page 4, May  
3 2000.

4  
5 Regarding claim 4 O'Flaherty teaches the invention substantially as claimed. See the  
6 rejection claim 1 above. However, O'Flaherty does not teach relational access table created at  
7 step (c) may have access to additional restricted data information added to it by updating the  
8 relational access table after it is created. According to Date, Update is expressed in the SQL  
9 language (Page 4 No. 5), SQL is an industry standard query language used in relational database.  
10 Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention  
11 was made to combine Date's Update (addition) instruction with the O'Flaherty's system, because  
12 Update (addition) is a standard SQL instruction and using an update instruction would make  
13 O'Flaherty's database changeable.

14  
15 Regarding claim 5 O'Flaherty teaches the invention substantially as claimed. See the  
16 rejection of claim 1 above. However, O'Flaherty does not teach relational access table created at  
17 step (c) may have access to certain restricted data information deleted from it by updating the  
18 relational access table after it is created. According to Date, Delete is expressed in the SQL  
19 language (Page 4 No. 5) and SQL is an industry standard query language. Therefore, it would  
20 have been obvious to one of ordinary skill in the art at the time the invention was made to  
21 combine Date's Delete instruction with the O'Flaherty's system, because Delete is a standard  
22 SQL instruction and using an Delete instruction would make O'Flaherty's database changeable.

1  
2 Claim 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Flaherty in  
3 view of the article –Utley, Craig., Designing the Star Schema Database, Page 1 and 6,  
4 02/02/2001.

5  
6 Regarding claim 6, O'Flaherty teaches the invention substantially as claimed above. See  
7 the rejection of claim 1. However, O'Flaherty does not teach relational database system that  
8 incorporates the internal security method that includes a star schema configuration. According to  
9 Craig - the Star Schema database is an OLAP (Online Analytical Processing) system (Page 1  
10 paragraph 4). As OLAP uses a large scale of indexing, it is very convenient for data retrieval  
11 (Page 6 paragraph 1 line 4-15, Page 1 paragraph 4 line 1-7). Therefore, it would have been  
12 obvious to one of ordinary skill in the art at the time the invention was made to interconnect  
13 O'Flaherty's databases in a star schema configuration as taught by Utley because it would have  
14 made the data retrieval much faster and more efficient.

15  
16 Regarding claim 7, O'Flaherty teaches the invention substantially as claimed. See the  
17 rejection of claim 1 above. However, O'Flaherty does not teach relational database system that  
18 incorporates the internal security method that includes a full star schema configuration.  
19 According to Craig - the Star Schema database is an OLAP (Online Analytical Processing)  
20 system (Page 1 paragraph 4). As OLAP uses a large scale of indexing, it is very convenient for  
21 data retrieval (Page 6 paragraph 1 line 4-15, Page 1 paragraph 4 line 1-7). Therefore, it would  
22 have been obvious to one of ordinary skill in the art at the time the invention was made to

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1 interconnect O'Flaherty's database in a full star schema configuration as taught by Utley because  
2 it would have made the data retrieval much faster and more efficient.

3  
4 Claim 8-10, 15-17, 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over  
5 O'Flaherty in view of - Deinhart et al (Patent # 5,911,143).

6  
7 *As per claim 8, O'Flaherty teaches:*

- 8 • Claim 8 step a, b are identical to the claim 1 step a, b and therefore taught by O'Flaherty and  
9 for the reasons given above.
- 10 • In claim 8 step c, O'Flaherty teaches to determine the hierarchical level of access for each  
11 system user with regard to the restricted data information; (Col 10 line 49-57).
- 12 • In claim 8 step f, O'Flaherty teaches the first and second system users accessing restricted  
13 data information stored in the system databases according to the relational access table  
14 created at step (e). (Col 2 line 57-62, Col 4 line 8-28 and line 49-54).
- 15 • In claim 8 step d, O'Flaherty teaches the implementation of different hierarchical levels of  
16 security to enforce the consumer data privacy (Col 10 line 49-57).
- 17 • In claim 8 step e, O'Flaherty teaches a dataview (virtual table) to create access control to all  
18 the data in the database (Col 4 line 8-30). These views are capable to generate SQL to  
19 manipulate data and store it to the result table (Col 10 line 65 to Col 11 line 3). He also  
20 teaches that each system user has access to the data according to his personal predefined  
21 view (Col 8 line 10-15) and other system users are prevented from having access to it, unless  
22 it is included in their dataview.

*O'Flaherty does not teach:*

- As per claim 8 step d, O'Flaherty does not teach that for at least two system users, based on the hierarchical level of access determination at step (c), that a second system user with a lower hierarchical level of access has access to the restricted data information that is a subset of the restricted data information to which a first system user with a higher hierarchical level of access has access.
- As per claim 8 step e, O'Flaherty does not teach that the created relational access table for controlling the first and second system users' access to restricted data information such that the first system user will have one or more records in the relational access table that is keyed to the first system user's access to restricted data information that is determined at step (b) joined with the second system user's access to restricted data information that is determined at step (b), and the second system user will have one or more records in the relational access table that is keyed to the second system user's access to restricted data information that is determined at step (b);

*Deinhart teaches:*

The access control is designed on basis of the roles and responsibilities. Role types are organized hierarchically and "first role subsumes a second role type" (Col 5 line 25-35). A role with higher responsibility will include the access over a role with lower responsibility.



1           Therefore, it would have been obvious to one of ordinary skill in the art at the time the  
2 invention was made to combine Deinhart's role-based hierarchical access control method on  
3 database system with O'Flaherty's system, because in this way one with higher access authority  
4 will have control over their own data as well as someone else's data underneath them and Data  
5 Integrity / Accuracy of the database is maintained thorough this hierarchical access control  
6 process.

7  
8           Regarding claim 9 see discussion of claim 2.

9  
10           Regarding claim 10, the combination of O'Flaherty in view of Deinhart teaches the  
11 invention substantially as claimed. See the rejection of claim 8 above. The combination does not  
12 teaches relational database has a foreign key that relates to a primary key of only one system  
13 user. However, it is known that in a relational database information are stored in the table.  
14 Primary key and foreign key are used to establish the relationship between tables. Even though in  
15 the references there are no direct mention about any primary key or foreign key relationship, but  
16 it is an implicit idea of any relational database (Col 3 line 1-3). Therefore, this has been rejected,  
17 because without primary / foreign key relationship establishment, no relational database could be  
18 designed.

19  
20   *As per claim 15 O'Flaherty teaches:*

- 21   • Claim 15 step a, b are identical to the claim 1 step a, b and therefore taught by O'Flaherty  
22   and for the reasons given above.

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- 1 • In claim 15 step c, O'Flaherty teaches to determine the hierarchical level of access for each  
2 system user with regard to the restricted data information; (Col 10 line 49-57).
- 3 • In claim 15 step f, O'Flaherty teaches the first and second system users accessing restricted  
4 data information stored in the system databases according to the relational access table  
5 created at step (e). (Col 2 line 57-62, Col 4 line 8-28 and line 49-54).
- 6 • In claim 15 step d and e, O'Flaherty teaches the implementation of different hierarchical  
7 levels of security to enforce the consumer data privacy (Col 10 line 49-57). O'Flaherty's  
8 invention used a dataview (virtual table) to access all the data in the database (Col 4 line 8-  
9 30). This views could be role based, capable to generate SQL to manipulate data and store it  
10 to the result table (Col 10 line 65 to Col 11 line 3). O'Flaherty also teaches that each system  
11 user has access to the data according to his personal predefined view (Col 8 line 10-15) and  
12 other system users are prevented from having access to it, unless it is included in their  
13 dataview.

14  
15 *O'Flaherty does not teach:*

- 16 • As per claim 15 step d, O'Flaherty does not teach that based on the hierarchical level of  
17 access determination at step (c), that a second system user with a lower hierarchical level of  
18 access has access to the restricted data information that includes other than a subset of the  
19 restricted data information to which a first system user with a higher hierarchical level of  
20 access has access.
- 21 • As per claim 15 step e, O'Flaherty does not teach that the created access table are capable of  
22 controlling the first and second system users' access to restricted data information such that

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1 the first system user will have one or more records in the relational access table that is keyed  
2 to the first system user's access to restricted data information that is determined at step (b)  
3 joined with the second system user's access to restricted data information that is determined  
4 at step (b), and the second system user will have one or more records in the relational access  
5 table that is keyed to the second system user's access to restricted data information that has  
6 been determined at step (b).

7  
8 *Deinhart teaches:*

9 The access control is designed on basis of the roles and responsibilities (Col 5 line 25-  
10 35). A role with higher responsibility will include the access over a role with lower  
11 responsibility. It is possible to predefine a view of a higher role to spread over several  
12 responsibilities and a lower role could include some responsibility from this role and something  
13 else from another role depending on the functional partitioning of the role (Col 8 line 53-58).

14  
15 Therefore, it would have been obvious to one of ordinary skill in the art at the time the  
16 invention was made to combine Deinhart's role-based hierarchical access control method on  
17 database system with O'Flaherty's system, because in this way one with higher access authority  
18 will have control over their own data as well as someone else's data underneath them and Data  
19 Integrity / Accuracy of the database is maintained thorough this hierarchical access control  
20 process.

21  
22 Regarding claim 16 see discussion of claim 2.

Regarding claim 17 see discussion of claim 10.

*As per claim 22 O'Flaherty teaches:*

- As per claim 22 step a, b are identical to the claim 1 step a, b and therefore taught by O'Flaherty and for the reasons given above.
- As per claim 22 step c, O'Flaherty teaches that determining the hierarchical level of access for each system user with regard to the restricted data information; (Col 10 line 49-57).
- As per claim 22 step f, O'Flaherty teaches that the first and second system users accessing restricted data information stored in the system databases according to the relational access table created at step (e). (Col 2 line 57-62, Col 4 line 8-28 and line 49-54).
- As per claim 22 step d refer to the claim 8 step d and 15 step d.
- As per claim 22 step e, O'Flaherty discloses a dataview (virtual table) to create access control to all the data in the database (Col 4 line 8-30). These views are capable to generate SQL to manipulate data and store it to the result table (Col 10 line 65 to Col 11 line 3). He also teaches that each system user has access to the data according to his personal predefined view (Col 8 line) and other system users are prevented from having access to it, unless it is included in their dataview.

*O'Flaherty does not teach:*

- The created access table are capable of controlling the first and second system users' access to restricted data information such that the first system user will have one or more records in the relational access table that is keyed to the first system user's access to restricted data

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1 information that is determined at step (b) joined with the second system user's access to  
2 restricted data information that is determined at step (b), and the second system user will  
3 have one or more records in the relational access table that is keyed to the second system  
4 user's access to restricted data information that has been determined at step (b).

5  
6 *Deinhart teaches:*

7 In Deinhart's reference, the access control is designed on the basis of roles and  
8 responsibilities (Col5 line 25-35).

9  
10 Therefore, it would have been obvious to one of ordinary skill in the art at the time the  
11 invention was made to combine Deinhart's role-based hierarchical access control method on  
12 database system with O'Flaherty's system, because in this way one with higher access authority  
13 will have control over their own data as well as someone else's data underneath them and Data  
14 Integrity / Accuracy of the database is maintained thorough this hierarchical access control  
15 process.

16  
17 Regarding claim 23 see discussion of claim 2.

18  
19 Regarding claim 24 see discussion of claim 10.

20

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1 Claim 11-12, 18-19, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable  
2 over O'Flaherty in view of - Deinhart et al (Patent # 5,911,143) and Date, C.J., An Introduction  
3 to Database Systems, 7<sup>th</sup> edition, Page 4, May 2000.  
4

5 Regarding claim 11, O'Flaherty and Deinhart teach the invention substantially as  
6 claimed. See the rejection of claim 8 above. However, they do not teach relational access table  
7 created at step (c) may have access to additional restricted data information added to it by  
8 updating the relational access table after it is created. According to Date, Update is expressed in  
9 the SQL language (Page 4 No. 5) and SQL is an industry standard query language. Therefore, it  
10 would have been obvious to one of ordinary skill in the art at the time the invention was made to  
11 combine Date's Update (addition) instruction with the O'Flaherty's system, because Update  
12 (addition) is a standard SQL instruction and using an update instruction would make  
13 O'Flaherty's database changeable.  
14

15 Regarding claim 12, O'Flaherty teaches the invention substantially as claimed. See the  
16 rejection of claim of 8 above. However, O'Flaherty does not teach relational access table created  
17 at step (c) may have access to certain restricted data information deleted from it by updating the  
18 relational access table after it is created. According to Date, Delete is expressed in the SQL  
19 language (Page 4 No. 5) and SQL is an industry standard query language. Therefore, it would  
20 have been obvious to one of ordinary skill in the art at the time the invention was made to  
21 combine Date's Delete instruction with the O'Flaherty's system, because Delete is a standard  
22 SQL instruction and using an Delete instruction would make O'Flaherty's database changeable.

Regarding claim 18 see discussion of claim 11.

Regarding claim 19 see discussion of claim 12.

Regarding claim 25 see discussion of claim 11.

Regarding claim 26 see discussion of claim 12

Claim 13-14, 20-21, 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Flaherty in view of - Deinhart et al (Patent # 5,911,143) and Utley, Craig., Designing the Star Schema Database, Page 1 and 6, 02/02/2001.

Regarding claim 13, O'Flaherty and Deinhart teach the invention substantially as claimed. See the rejection of claim 8 above. However, they do not teach relational database system that incorporates the internal security method that includes a star schema configuration. According to Craig - the Star Schema database is an OLAP (Online Analytical Processing) system (Page 1 paragraph 4). As OLAP uses a large scale of indexing, it is very convenient for data retrieval (Page 6 paragraph 1 line 4-15, Page 1 paragraph 4 line 1-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to interconnect O'Flaherty and Deinhart's database in a star schema configuration as taught Utley, because it would have made the data retrieval much faster and more efficient.

1  
2           Regarding claim 14, O'Flaherty and Deinhart teach the invention substantially as  
3 claimed. See the rejection of claim 8 above. However, they do not teach relational database  
4 system that incorporates the internal security method that includes a full star schema  
5 configuration. According to Craig - the Star Schema database is an OLAP (Online Analytical  
6 Processing) system (Page 1 paragraph 4). As OLAP uses a large scale of indexing, it is very  
7 convenient for data retrieval (Page 6 paragraph 1 line 4-15, Page 1 paragraph 4 line 1-7).  
8 Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention  
9 was made to interconnect O'Flaherty and Deinhart's database in a full star schema configuration  
10 as taught by Utley, because it would have made the data retrieval much faster and more efficient.

11  
12           Regarding claim 20 see discussion of claim 13.

13  
14           Regarding claim 21 see discussion of claim 14.

15  
16           Regarding claim 27 see discussion of claim 13.

17  
18           Regarding claim 28 see discussion of claim 14.

19  
20  
21  
22



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*Conclusion*

A shortened statutory period for response to this action is set to expire **Three months** from the mail date of this letter. Failure to respond within the period for response will result in **ABANDONMENT** of the application (see 35 U.S.C. 133, M.P.E.P. 710.02, 710.02(b)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashfaq Khan whose telephone number is (571) 272-7964. The examiner can normally be reached on M-F between 9:00am - 5:30pm during the government business day.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**ANDREW CALDWELL**  
**SUPERVISORY PATENT EXAMINER**